UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,721	02/23/2004	Tom Muir	3440-P02516US1	1512

110 7590 07/23/2007

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

EXAMINER	
HA, JULIE	

ART UNIT	PAPER NUMBER
1654	

MAIL DATE	DELIVERY MODE
07/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/784,721	MUIR ET AL.	
	Examiner	Art Unit	
	Julie Ha	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *51 and 63-73* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *51 and 63-73* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Amendment after Non-Final Rejection filed on June 18, 2007 is acknowledged. Claims 52-62 have been cancelled and new claims 69-73 have been added. Claims 51, 63-73 are pending in this application. Applicant's elected without traverse of SEQ ID NO:9 as the FRET enzyme substrate species in the reply filed on September 01, 2006. Claims 67 and 68 were found to be free of the prior art in the previous office action. Claims 51, 63-73 are examined on the merits in this office action.

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: the Oath and Declaration does not indicate the preliminary amendment filed on the filing date of the application. The MPEP states, "for applications filed before September 21, 2004, a preliminary amendment hat is present on the filing date of the application is part of the original disclosure of the application if the preliminary amendment was referred to in the first executed oath or declaration under 37 CFR 1.63 filed in the application." See MPEP § 602. Applicant filed preliminary amendment canceling claims 1-50 and adding claims 51-68 on the same day as the original filing of the application, February 23, 2004. If Applicant wishes to have the preliminary amendment to be part of the original disclosure, oath and declaration need to refer to the preliminary amendment.

Please note that the part of the IDS has not been considered because copies have not been provided.

Withdrawn Objection and Rejections

2. All objections not recited herein are hereby withdrawn due to Applicant's amendments.

3. All rejections not recited herein are hereby withdrawn due to Applicant's arguments and amendments.

New Grounds for Rejection

Rejection-35 U.S.C. 112, 2nd

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 51, 67 and 68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 51 recites "said first and second detectable proximity sensor peptides being spaced apart from one another". This phrase is unclear, because a space provide a point of reference. It is unclear how far apart would be required to be "spaced apart from one another". For example, it is unclear whether a peptide bond or a linker would

be enough as a "space apart from one another" or would have be larger than a peptide bond or a linker to be considered a "space apart from one another".

7. Claim 67 recites "the composition of claim 51 as set forth in Figure 5A (SEQ ID NO: 8). The claim is drawn to a composition, and reciting Figure 5A or SEQ ID NO: 8 does not make a composition. A composition is comprised of peptide and other adjutants.

8. Claim 68 recites "the composition as shown in SEQ ID NO:9". The claim is drawn to a composition, and reciting SEQ ID NO: 9 does not make a composition. A composition is comprised of peptide and other adjutants.

Rejection-35 U.S.C. 112, 1st

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 69-73 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time of the application was filed, had possession of the claimed invention.

11. The claims are drawn to a composition for detecting the effect of a kinase on a peptide substrate, the activity of the kinase being effective to convert a site in the

peptide substrate from an unphosphorylated state to a phosphorylated state. The claims in question recite "a phosphatase".

Lack of Ipsis Verbis Support

12. The specification is void of any literal support for the enzyme "phosphatase" claimed. The word "phosphatase" is not present in the specification. The enzyme "kinase" is provided throughout the specification (see for example, paragraph [0050]). The specification provides that "protein kinases and their phosphorylation/desphosphorylation targets are implicated in critical pathways" (see paragraph [0079]). The specification provides "anti-phosphotyrosine western analysis" (see for example, paragraph [0049]). However, this is not in the context of "phosphatase", since anti-phosphotyrosine is an antibody that is specific to phosphorylated tyrosines.

Lack of Implicit or Inherent Support

13. "While there is not in *haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure." See MPEP 2163. Thus support can be furnished implicitly or inherently for a specifically claimed limitation. However, the specification lacks any implicit or inherent support for the claimed "phosphatase". As explained supra, there is no support for any concept of the enzyme "phosphatase" in the specification. The word "phosphatase" is a specific enzyme that dephosphorylates (removes phosphates) from its substrates. The description of Figure 3 of the specification provides phosphorylation reaction with or without ATP, and the anti-phosphotyrosine western analysis of the reaction with or

without ATP does not express, implicit or inherent disclosure of phosphatase being present. The antibody would detect the phosphorylated tyrosine in the protein. There is no support found in the specification for "phosphatase".

14. Claim 51 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The MPEP states that the purpose of the written description requirement is to ensure that the inventor had possession, as of the filing date of the application, of the specific subject matter later claimed by him. The courts have stated:

"To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." Lockwood v. American Airlines, Inc., 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); In re Gosteli, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." Lockwood, 107 F.3d at 1572, 41 USPQ2d at 1966.". Regents of the University of California v. Eli Lilly & Co., 43 USPQ2d 1398.

15. The MPEP lists factors that can be used to determine if sufficient evidence of possession has been furnished in the disclosure of the Application. These include "level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention. Disclosure of any combination of such identifying characteristics that distinguish the claimed invention from other materials and would lead one of skill in the art to the

conclusion that the applicant was in possession of the claimed species is sufficient." MPEP 2163.

16. Further, for a broad generic claim, the specification must provide adequate written description to identify the genus of the claim. In Regents of the University of California v. Eli Lilly & Co., the court stated:

> "A written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials. Fiers, 984 F.2d at 1171, 25 USPQ2d at 1606; In re Smythe, 480 F.2d 1376, 1383, 178 USPQ 279, 284-85 (CCPA 1973) ("In other cases, particularly but not necessarily, chemical cases, where there is unpredictability in performance of certain species or subcombinations other than those specifically enumerated, one skilled in the art may be found not to have been placed in possession of a genus. . . ."). Regents of the University of California v. Eli Lilly & Co., 43 USPQ2d 1398.

17. The MPEP further states that if a biomolecule is described only by a functional characteristic, without any disclosed correlation between function and structure of the sequence, it is "not sufficient characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence." MPEP 2163. The MPEP does state that for generic claim the genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. MPEP 2163. If the genus has a substantial variance, the disclosure must describe a sufficient variety of species to reflect the variation within that genus. See MPEP 2163. Although the MPEP does not define what constitute a sufficient number of representative, the Courts have indicated what do not constitute a representative number species to adequately describe a broad generic. In Gostelli, the Court determined that the disclosure of two chemical compounds within a subgenus did not describe that subgenus. In re Gostelli, 872 F.2d at 1012, 10 USPQ2d at 1618.

18. In the instant case, the claim is drawn to a composition comprising a functional peptide substrate, said substrate being selected from the group consisting of transcription factors and signal transduction factors. The generic statement peptide substrate does not provide ample written description for the compounds since the claim does not describe a single structural feature. The specification does not clearly define or provide examples of what qualify as compounds of the claimed invention.

19. As stated earlier, the MPEP states that written description for a genus can be achieved by a representative number of species within a broad generic. It is unquestionable claim 51 is broad generics with respect all possible compounds encompassed by the claims. The possible structural variations are limitless to any class of peptide or a peptide-like molecule that can form peptide bonds and function as a peptide substrate. It must not be forgotten that the MPEP states that if a peptide is described only by a functional characteristic, without any disclosed correlation between function and structure of the sequence, it is "not sufficient characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence." MPEP 2163.

20. Here, though the claims may recite some functional characteristics, the claims lack written description because there is no disclosure of a correlation between function and structure of the compounds beyond compounds disclosed in the examples in the specification. Moreover, the specification lack sufficient variety of species to reflect this variance in the genus since the specification does not provide any examples of derivatives. The specification is void of organic molecules that functions as a peptide-

like molecule that qualify for the functional characteristics claimed as a peptide or a peptide-like molecule or other peptidic molecules, and other synthetic peptide or peptide-like molecule that can function as peptide substrates.

21. The specification is limited to the peptide or peptide-like molecules that belong to the same functional class of protein, transcription factors and signal transduction factors. The working example describes the peptide substrate for c-Abl (EAIYAAPFAKKK (SEQ ID No:2) (see paragraphs [0088] and [0114]). The working example only describes the peptide substrate for c-Abl (see paragraph Example 2). The example discloses that treatment of Rh-(Crk-II)-FI with a recombinant c-Abl fusion consisting of only the SH2 and kinase domains, did not lead to any detectable phosphorylation over 60 min as indicated by fluorescence and western blotting analysis, and an optimized peptide substrate (EAIYAAPFAKKK (20)) was completely phosphorylated by this truncated version of the kinase after 60 min (see paragraph [0118]). The specification does not describe any other peptide substrate other than transcription factors and signal transduction factors (which are functional characteristics), such as any peptide substrates that can be phosphorylated (i.e., any peptide having serine, threonine and tyrosine residues), and any other type of peptide or peptide-like molecule, such as peptide mimetics that can be phosphorylated. The only structural limitations of claim 51 are peptide substrate and FRET pair. Any peptide can be coupled to FRET pair (thiol-specific probes, amine reactive probes available). Description of SEQ ID NO:2, peptide substrate of c-Abl and peptide substrate consisting of transcription factors and signal transduction factors are not sufficient to encompass

numerous other proteins and peptides that belong to the same genus. For example, there are varying lengths, varying amino acid compositions, and numerous distinct qualities that make up the genus. There are 20 naturally occurring amino acids, and non-natural amino acids, such as D-amino acids, beta-amino acids and synthetic mimic that all can form peptide bonds and react with fluorescent probes. Therefore, there is not sufficient amount of examples provided to encompass the numerous characteristics of the whole genus claimed.

22. The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See In re Wilder, 736 F.2d 1516, 1521, 222 USPQ 369, 372-73 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate"). Accordingly, it is deemed that the specification fails to provide adequate written description for the genus of the claims and does not reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the entire scope of the claimed invention.

Rejection-35 U.S.C. 102

23. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

24. Claims 51, 63-66 and 69-73 rejected under 35 U.S.C. 102(e) as being anticipated by Craig et al (US Patent # 6656696).

25. The instant claims are drawn to a composition for detecting the effect of a kinase and phosphatase on a peptide substrate, the activity of the enzymes being effective to convert a site in the peptide substrate from an unphosphorylated state to a phosphorylated state, the substrate being selected from the group consisting of transcription factors and signal transduction factors or fragments, the first and second detectable proximity sensor peptides being spaced apart from one another, the conversion of the site from unphosphorylated state to the phosphorylated state occurring without cleavage of the amino acid backbone of the peptide substrate, and the polypeptide comprises a FRET pair (fluorescein and tetramethylrhodmaine).

26. Craig et al teach methods and compositions for monitoring the interaction of binding partners as a function of the addition or subtraction of a phosphate group to or from one of the binding partners by a protein kinase or phosphatase (see abstract). The reference further teaches that the sites of protein phosphorylation has revealed a number of sequence specific motifs which when phosphorylated or dephosphorylated, promote interaction with selected target proteins to either induce or inhibit activity of either the phosphorylated polypeptide or the target polypeptide...many proteins involved in intracellular signal transduction have been shown to contain a domain comprising a

sequence of approximately 100 amino acid...the target protein and several peptide sequence which, when phosphorylated, bind to an SH2 domain (see column 3, lines 7-21). Further, the reference teaches that the enzyme to be assayed is a protein kinase or a phosphatase (see column 5, lines 4-5). This meets the limitation of claims 51 and 69 in part. The reference further teaches that the "binding domain" refers to the amino acid residues of a first polypeptide required for phosphorylation-dependent binding between the first polypeptide and its binding partner (see column 5, lines 18-24) and "binding partner" refers to a polypeptide or fragment there of (a peptide) that binds to a binding domain, sequence or polypeptide, as defined herein, in a manner which is dependent upon the state of phosphorylation of a site for phosphorylation or desphosphorylation (see column 6, lines 33-37). The reference further teaches that the polypeptides comprising or consisting of natural binding domains, sequences or polypeptides or a binding partner therefore are labeled with thiol reactive derivatives of fluorescein and tetramethylrhodamine FRET pair (see column 24, lines 59-62). The reference further discloses a list of non-limiting chemical fluorophores for use that include FITC, R-phycoerythrin, rhodamine, texas red and cy3 (see Table 1, column 17). Furthermore, the reference teaches that fluorescent labels employed in FRET, the reporter labels are chosen such that the emission wavelength spectrum of one (the "donor") is within the excitation wavelength spectrum of the other (the "acceptor") (see column 10, lines 15-18). This meets the limitation of claims 63-65 and 70-72. Further, the reference teaches monitoring of the association of polypeptides, which are labeled with fluorescent (protein and chemical) or other labels (see column 4, lines 20-23). This reads on claims 66 and

73, since a fluorescent protein would consist of fluorescent amino acid derivative. Figure 2 teaches the kinase and phosphatase activity on the polypeptide substrates, wherein when the peptides are phosphorylated, the peptides are not bound and when the peptides are unphosphorylated by phosphatase reaction, the peptides are bound. According to Figure 2, no peptide backbone is involved in the cleavage of the peptide substrates, thus, this meets the limitation of claims 51 and 69. The reference further teaches that the donor (D) and acceptor (A) fluorophores must have spatial proximity, since a single wavelength is used to determine the efficiency of fluorescence energy transfer between fluorophores (see column 25, lines 38-51). Therefore, this meets the limitations of claims 51, 63-66 and 69-73. Please note that the base claims 51 and 69 are drawn to a composition. The only structural limitations recited by these claims are the peptide substrate and FRET pair. Thus, any peptide substrate having FRET pair coupled to the peptide substrate meet the limitations of the claims.

Rejection-35 U.S.C. 103

27. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

28. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

29. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

30. Claims 64 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craig et al (US Patent # 6656696) as applied to claims 51, 63-66, 69-70-73 above, and further in view of Lakowicz JR.(Principles of Fluorescence Spectroscopy, second edition, 1999).

31. The instant claims are drawn to a composition wherein the FRET pair is selected from the group consisting of fluorescein and tetramethylrhodamine, IAEDANS and fluorescein, EDANS and DABCYL, BODIPY fluorescein and BODIPY fluorescein, phycoerythrin and CY5 and pyrene and coumarin.

32. As described supra, Craig patent '696 teach monitoring the interaction of binding partners as a function of the addition or subtraction of a phosphate group to or from one of the binding partners by a protein kinase or phosphatase wherein the FRET pair is fluorescein and tetramethylrhodamine (see abstract and see column 24, lines 59-62).

The reference further discloses a list of non-limiting chemical fluorophores for use that include FITC, R-phycoerythrin, rhodamine, texas red and cy3 (see Table 1, column 17). Furthermore, the reference teaches that fluorescent labels employed in FRET, the reporter labels are chosen such that the emission wavelength spectrum of one (the "donor") is within the excitation wavelength spectrum of the other (the "acceptor") (see column 10, lines 15-18). The difference between the reference and the instant claims are that the reference does not teach IAEDANS and fluorescein, EDANS and DABCYL, BODIPY fluorescein and BODIPY fluorescein, CY5 and pyrene and coumarin.

33. However, as described in the previous office action, Lakowicz JR teaches that FRET is transfer of the excited-state energy from the initially excited donor (D) to an acceptor(A) (see Chapter 13, pp. 367-394). Furthermore, the reference teaches that the most common application of RET is to measure the distances between two sites on a macromolecule. The subunits were labeled with fluorescein (carboxyfluorescein succinimidyl ester) and rhodamine (Texas Red sulfonyl chloride) derivatives. Binding will bring donor and acceptor within the Forster distance, resulting in energy transfer. Additionally, the reference teaches many possible fluorophores that can be used as donors and acceptors (see Chapters 3 and 13, pages 63-92 and 367-394). In chapter 3, the reference teaches numerous fluorophores are available for covalent and noncovalent labeling of proteins. The covalent probes can have a variety of reactive groups, for coupling with amine, sulfhydryl, or histidine side chains with proteins. Some of the more widely used probes are Dansyl chloride, TRITC, FITC, Acrylodan, 5-IAF,

NBD-Cl. Fluoresceins and rhodamines are also widely used as extrinsic labels (see pages 66-69).

34. Therefore, it would have been obvious to the ordinary skilled in the art to choose any fluorophores taught by Lakowicz and Craig et al patent '696, and commercially available to label any peptide, substrate, proteins to measure the dissociation or association of these compounds since FRET is transfer of the excited-state energy from the initially excited donor (D) to an acceptor (A). The donor molecules typically emit at shorter wavelengths, which overlap with the absorption spectrum of the acceptor. There is a reasonable expectation of success since those skilled in the art knows that the donor and acceptor pairs are commercially available and using the teachings of Lakowicz, can determine which donor-acceptor pair is best for the experiments. Furthermore, Craig et al teach that fluorescent labels employed in FRET, the reporter labels are chosen such that the emission wavelength spectrum of one (the "donor") is within the excitation wavelength spectrum of the other (the "acceptor") (see column 10, lines 15-18). This implies that any FRET pair can be selected as long as the donor emission wavelength is within the excitation wavelength spectrum of the acceptor.

Conclusion

35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

36. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Ha whose telephone number is 571-272-5982. The examiner can normally be reached on Mon-Fri, 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Julie Ha
Patent Examiner
AU 1654

ANISH GUPTA
PRIMARY EXAMINER
7/19/07